ABSTRACT OF THE DISCLOSURE

Reverse link reception and reverse link capacity are improved at a multi-sector radio base station (RBS) by forcing always-softer reverse link handoff conditions for mobile stations served by the RBS. Whenever a serving sector reverse link is assigned to a mobile station at the RBS, one or more additional reverse links are assigned to it from remaining sectors of the RBS. Such assignments are made irrespective of whether those sectors are, or could be, used to serve the mobile station on the forward link. The RBS improves its reception of the mobile station's reverse link transmissions by combining signals from all of the assigned reverse links. With improved reception, mobile stations can be commanded or configured to reduce their reverse link transmit power, thereby reducing reverse link interference and increasing reverse link capacity. Always-softer handoff may not be forced unless the mobile station has a reverse supplemental channel, since the use of such channels makes interference reduction particularly beneficial.